

IN THE CLAIMS

Please amend claims 1, 3, 11, 14, 16 and 19, as follows:

1. (Currently Amended) A process for producing a semiconductor device comprising the steps of:

using a grindstone formed of abrasive grains and a resin binder for binding and retaining the abrasive grains;

feeding a dispersant-containing processing liquid to a surface of the grindstone, and

polishing and planarizing the surface of a semiconductor wafer so as to expose at least two different thin films formed on the surface of the semiconductor wafer during a part or whole of processing time,

wherein said grains have average grain size of 0.1-0.4 µm and at least 99% of said grains are in a range of grain size of 1 µm or less, and said processing liquid is free of abrasives, and

wherein said dispersant enables to improve a polishing selectivity between said two different thin films.

2. (Original) A process according to claim 1, wherein said at least two different thin films include a film mainly containing silicon dioxide and a film mainly containing silicon nitride.
3. (Currently Amended) A process according to claim 1, wherein a concentration of the dispersant in the processing liquid is changed during processing for changing a polishing selectivity between said two different films.

4. (Previously Presented) A process according to claim 1, wherein at least 99% of the abrasive grains have a particle size of 0.001 μm or greater but not greater than 1 μm .
5. (Original) A process according to claim 1, wherein a surfactant is employed as the dispersant added to the processing liquid.
6. (Previously Presented) A process according to claim 1, wherein a polycarboxylate is employed as the dispersant added to the processing liquid.
7. (Original) A process according to claim 1, wherein ammonium polyacrylate is used as the polycarboxylate.
8. (Original) A process according to claim 7, wherein the concentration of ammonium polyacrylate ranges from 0.05 wt. % to 5 wt. %.
9. (Previously Presented) A process according to claim 7, wherein ammonium polyacrylate has a molecular weight ranging from 100 to 200000.
10. (Previously Presented) A process according to claim 1, wherein the grindstone including, cerium dioxide, aluminum oxide, silica, zirconium oxide, manganese oxide, titanium oxide or magnesium oxide or mixture thereof as the abrasive grains is employed.
11. (Currently Amended) A process for producing a semiconductor device, comprising the steps of:
using a grindstone formed of abrasive grains and a resin binder for binding and retaining the abrasive grains;

feeding a dispersant-containing processing liquid to the surface of the grindstone, and

polishing and planarizing the surface of a semiconductor wafer over which a silicon nitride film and a silicon oxide film have been stacked one after another,

wherein said grains have average grain size of 0.1-0.4 μm and at least 99% of said grains are in a range of grain size of 1 μm or less, and said processing liquid is free of abrasives, and

wherein the dispersant has a concentration permitting a removal rate ratio of the silicon oxide film not less than 20 relative to the silicon nitride film.

12. (Original) A process according to claim 11, wherein the concentration of the dispersant ranges from 1 wt. % to 4 wt. %.
13. (Original) A process according to claim 11, wherein any one of ammonium polyacrylate, polycarboxylates, polyoxyethylene derivatives, phosphate condensates, lignin sulfonate, aromatic sulfonate formalin condensates and alkylamines is used as the dispersant.
14. (Currently Amended) A process for fabricating a semiconductor device, comprising the steps of:
 - using a grindstone formed of abrasive grains and a resin binder for binding and retaining the abrasive grains;
 - feeding a dispersant-containing processing liquid to the surface of the grindstone, and
 - polishing and planarizing the surface of a semiconductor wafer over which a silicon nitride film and a silicon oxide film have been stacked one after another [[;]] ,

wherein said grains have average grain size of 0.1-0.4 μm and at least 99% of said grains are in a range of grain size of 1 μm or less, and said processing liquid is free of abrasives, and

wherein the dispersant is fed at a low concentration at an initial stage of polishing for high removal rate of said silicon oxide, followed by an increase in the concentration for high selectivity of removal rate of said silicon oxide to said silicon nitride.

15. (Original) A process according to claim 14, wherein the concentration of the dispersant is 1% or less at the initial stage and then it is increased to 1.5% or greater.

16. (Currently Amended) A process for fabricating a semiconductor device, comprising the steps of:

using a grindstone formed of abrasive gains and a resin binder for binding and retaining the abrasive grains;

feeding a dispersant containing processing liquid to the surface of the grindstone, and

polishing and planarizing the surface of a semiconductor wafer over which a silicon nitride film and a silicon oxide film have been stacked one after another [[;]] ,

wherein said grains have average grain size of 0.1-0.4 μm and at least 99% of said grains are in a range of grain size of 1 μm or less, and said processing liquid is free of abrasives, and

wherein the processing liquid is supplied while setting the concentration of the dispersant within a range permitting a removal rate of the silicon nitride film once decreased to a low level and maintained at substantially the same low level and a removal rate of the silicon oxide film once increased to a high level and maintained at substantially the same high level.

17. (Original) A process according to claim 16, wherein the processing liquid is supplied while setting the concentration of the dispersant within a range permitting a removal rate of the silicon nitride film once decreased to a low level and maintained at substantially the same low level and a removal rate of the silicon oxide film decreased from the maximum value.
18. (Original) A process according to claim 16, wherein the dispersant has a lowered viscosity.
19. (Currently Amended) A production process of a semiconductor device, comprising at least the following steps:
 - forming a silicon nitride film over a semiconductor substrate and then forming a trench for isolation region in the semiconductor substrate;
 - forming an insulating film over said trench for isolation region and said silicon nitride film[[;]] , and
 - using a grindstone formed of abrasive grains and a resin binder for binding and retaining the abrasive grains feeding a dispersant containing processing liquid to the surface of the grindstone, polishing the surface of the semiconductor substrate, thereby planarizing said insulating film, and leaving the insulating film only in said trench for isolation region, and removing the silicon nitride film from the substrate in a region other than the isolation region,
wherein said grains have average grain size of 0.1-0.4 μm and at least 99% of said grains are in a range of grain size of 1 μm or less, and said processing liquid is free of abrasives, and
wherein said dispersant enables to improve a polishing selectivity between said insulating film and silicon nitride film.

20. (Original) A process according to claim 19, wherein in the step for planarizing said insulating film and removing the silicon nitride film by polishing, the surface of the semiconductor substrate is polished using the processing liquid having a dispersant concentration permitting a removal rate ratio of the silicon oxide film not less than 20 relative to the silicon nitride film.
21. (Original) A process according to claim 19, wherein in the step for planarizing said insulating film and removing the silicon nitride film by polishing, the surface of the semiconductor substrate is polished by supplying the processing liquid having a dispersant concentration set low at an initial stage of polishing and then supplying the processing liquid having an increased concentration.
22. (Original) A process according to claim 19, wherein in the step for planarizing said insulating film and removing the silicon nitride film by polishing, the surface of the semiconductor substrate is polished by feeding the processing liquid having a dispersant concentration within a range permitting a removal rate of the silicon nitride film once decreased to a low level and maintained at substantially the same low level and a removal rate of the silicon oxide film once increased to a high level and maintained at substantially the same high level.